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ABSTRACT

For the most part, the visual component has been ignored in programs developed to improve the general education of undergraduate students. At the University of Cincinnati (Ohio), however, a general education program has been developed that includes a visual literacy component. Faculty development workshops have been held to remind faculty members of the importance of visual literacy. Workshops have focused on three acquired abilities: (1) the need to visualize internally in response to stimuli that are both a discipline-related and non-discipline related; (2) the need to create visual images that are both art-related and non-art-related; (3) and the need to read visual images in the natural and built environments. The acronym VCR, from visualize, create, and read, is a fitting acronym for the approach the workshops intend to promote. Seven figures illustrate the discussion. (Contains 9 references.) (SLD)

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Visual Literacy in General Education at the University of Cincinnati

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Visual Literacy in General Education at the University of Cincinnati

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For the past several years many institutions of higher education have initiated programs to improve the general education of undergraduates. Those programs typically identify three components that need improvement: writing, speaking, and critical thinking. The visual component, for the most part, has been ignored. This fourth component, however, has been included in the general education program at the University of Cincinnati.

Two years ago, a committee was formed: Hermine Feinstein as chair from the College of Art, Robert Hagerty from the art department of a branch campus, Claudia Taylor from mathematics, and Manfred Wolfram from electronic media. Our charge was to design and implement faculty development workshops. Last year we conducted two workshops; this year we will conduct two more. The workshops, which accomodated 30 participants from a variety of disciplines, were held about 60 miles from Cincinnati for two days each. The front cover of the invitation is shown in Figure 1.

Definitions and Rationale

The workshops began with our working definition, our rationale, and a short review of the research on the instructional use of visual images. We provided the participants with workbooks that contained an expanded definition and rationale, and explanations of the exercises in which they were to participate. Figure 2 is a condensed version of our definition.

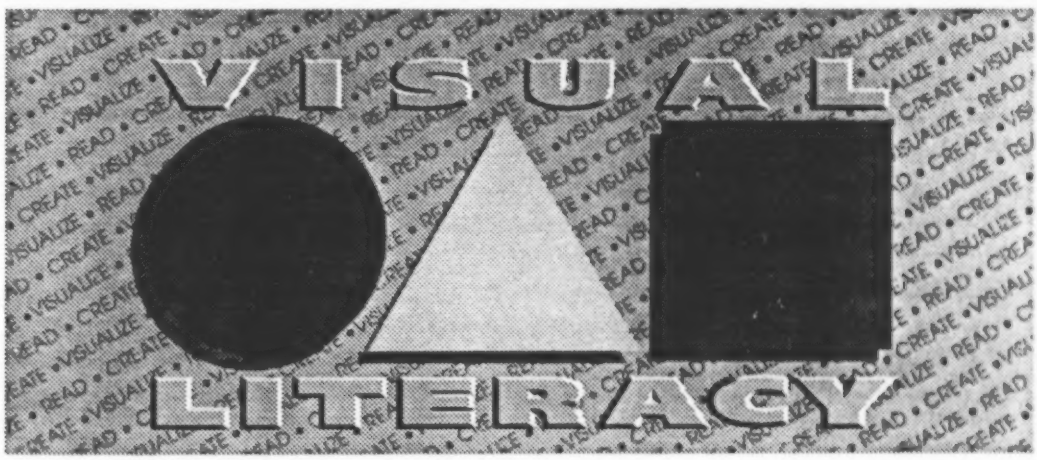

Figure 1 . Front cover of workshop invitation.

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VISUAL LITERACY IN GENERAL EDUCATION

Visual literacy, one of the four components of General Education, is the acquired ability to visualize internally, to create visual images externally, and to read visual images in the natural and built environment.

THE THREE ABILITIES

A. ***TO VISUALIZE***

1. Stimuli *that are not* discipline related
   To see in the "mind's eye": concepts, configurations, consequences, direction, feelings, flashbacks, layering, motion, outcomes, scenarios, sequencing

   (Note: A.1 provides practice for A.2)

2. Stimuli *that are* discipline related
   To make abstract ideas concrete and vivid through figurative language or through visual images. To clarify or enhance ideas, be they spoken, written, musical, or gestural through visualization by exploring disparate ideas and finding their commonalities

B. ***TO CREATE***

1. To create visual images in *non-art related* endeavors. This involves both creating and understanding (being able to read): graphs, charts, diagrams, tables, technical illustrations, conceptual models (2-dimensional or 3-dimensional), and instructions that illustrate ideas and information

2. To create visual images in *art related* endeavors applies primarily to those in the studio disciplines throughout the University but does not exclude novices

C. ***TO READ***

To read visual images in the natural and built environment means to interpret them literally or metaphorically. In the built environment, images, singly or in combination, could include: architecture, urban design, landscape design, industrial design, interior design, graphic design, fashion design, painting, drawing, printmaking, sculpture, ceramics, crafts, jewelry, fibers, TV, movies, video, photography, and those images computer generated.

Although the ideal goal in reading visual images is a synthesis of the categories of interpretation identified below, interpretation may include activities in any of the following five categories:

1. Description, a general inventory of what is seen, yields a literal interpretation
2. Historical Considerations take into account influences, context, environment, or situation
3. Analysis determines how the image was composed or constructed
4. Metaphoric Interpretation answers the question: What else, other than the obvious, can the image represent?
5. Evaluation answers the questions: Is the image as good as...? Or does the image represent phenomena adequately?

Figure 2. Condensed version of definition.

Before enumerating four reasons why being visually literate is important, we reminded the participants that by the time we were in the first grade all of us had some basic skills in communication. We were able to talk, to read, to write, and to draw stick figures. Through the years our talking, reading, and writing skills were developed further through teaching, though with less and less success as evidenced by national test scores. But our visual skills, for the most part, were not developed. They were left dangling, to develop, if at all, by our outside interests and by outside influences.

Knowing "how" to see, how to decipher images, has long been thought to be the exclusive province of artists. Yet in today's world, knowing "how" to see is crucial for everyone. Indeed the propensity for developing visual skills is part of our genetic and cultural inheritance (Koestler, 1975). Specifically, being visually literate is important because ***first*** it requires increased right hemispheric involvement, thereby engaging whole brain thinking. "Looking is a given; seeing is an achievement." That is the motto our committee. We mean that most of us are born with eyes capable of looking at the world. The **looking** capability increases in a general way as an "automatic consequence of maturation" (Eisner, 1972, p. 66). This looking capability, general visual awareness, is a mechanical and habitual process of vision, tending mainly toward surface or literal meaning, primarily a left hemispheric function. By contrast, **seeing** is an expanded interpretation of that mechanical and habitual process. Seeing is a focused awareness that enables us to make finer quantitative and qualitative distinctions. It also enables us to understand and create images as metaphoric symbols, an important right hemispheric function. Seeing, unlike looking, is not "an automatic consequence of maturation." Seeing requires the active and appropriate engagement of **both left and right hemispheres.**

The ***second*** reason why being visually literate is important is that it enables us to understand abstract left brain concepts by making them vivid, concrete, and familiar. For example, the concept of genetic inheritance (nature) can be likened to the hard wiring of a computer. The concepts of experience and education (nurture) can be likened to computer programs. Here, the mental gymnastics of likening one thing to another involves visualization.

The ***third*** reason why being visually literate is important is that it allows us to consider the same concept in different ways. When brain researchers (Levy and Trevarthen, 1976, p. 302) tested the different aptitudes of the left and right hemispheres with both split-brain patients and normals, the researchers found consistent differences. For example, subjects were shown to their right visual field (left hemisphere) three pictures: an uncut cake on a plate, a round brimmed hat, and a fork and spoon. When they were asked to match similar objects, they matched the fork and the spoon with the cake on a plate. *Their left hemispheres attended to similarities of function.* When the subjects were shown the same pictures to their left visual field (right hemisphere), they matched the round

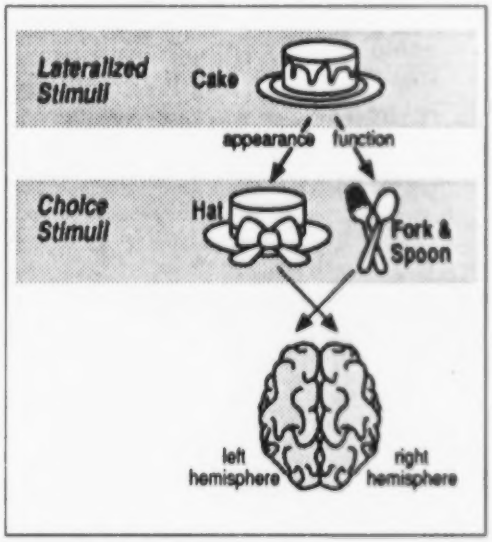


Figure 3.

brimmed hat with the cake on the plate. *Their right hemispheres attended to similarities of appearances and structure.* The point is that we process the same information with each hemisphere, but we do it differently.

The ***fourth*** reason why being visually literate is important is that it empowers us to read and understand the visual environment so that we are, insofar as possible, not manipulated by it and can make informed decisions. Consider for a moment that visual communication is advanced by such media as photography, television, and computers. All those media are being used to create what is now known as "virtual realities," realities of intangible visual images, many of which embody subliminal stimuli. It behooves us to learn how to decipher those realities. Indeed, it behooves us to regrind our visual lenses.

Structure of the Workshops

The workshops were divided into the three components that corresponded to our definition: ***to visualize*** internally, ***to create*** visual images externally, and ***to read*** visual images in the natural and built environment.

A. To visualize internally
1. stimuli ***that are not*** discipline-related

Before the participants engaged in visualizing stimuli that were not discipline-related, we had them do some relaxed attention exercises that release excess tension. These exercises included stretching of the neck, arms and hands. We then asked them to picture the outside of their front doors. We asked them to note the color, to note whether it was solid or had windows, and to note whether the doorknob was on the left or right. We next asked them to envision the inside of a supermarket, a vacation, a safari. Finally, we asked them to imagine they were looking at their reflections in a mirror. The reflections that we suggested did not reflect their exact images. Rather, they reflected images of themselves in different moods and in different sizes.

There are three points to these exercises. First, all of us are capable of visualizing to some extent. Second, given a common stimulus, our visualizations will tend to differ. Third, visualizations *that are not* discipline-related can be improved with practice. That practice, in turn, can strengthen visualizations *that are* discipline-related.

A. To visualize internally
2. stimuli ***that are*** discipline-related

In exercises A.2. the task for participants was to make concepts visual in the minds of their students. The participants were shown a list of concepts from several disciplines and an analogy for each that would conjure a visual image. See Figure 4 for a partial list.

The analogy for psychotherapy, having braces on your teeth, prompted much discussion. Several people objected to this image because it implied that psychotherapy was a method for achieving conformity. Others said that, on the contrary, psychotherapy, like braces, must be fitted to the individual. The analogy is effective because it generates argument. It can be modified to suit a particular point of view and is an excellent image for clarifying one's thoughts on the subject. Another analogy on this list was contributed by one of the participants who teaches business, in particular group growth and development over time. The underlying concepts are that groups form, discuss their tasks (storm), reach consensus (achieve a norm), perform their tasks, and eventually adjourn. While doing her workshop homework (to be described subsequently) it occurred to her that the image of baking a cake might be an apt analogy. Form would be to collect the ingredients; storm would be to mix them; norm would be the finished batter. Perform

would be to bake the cake; adjourn would be to eat the cake.

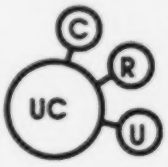
After a discussion of these analogies our committee member, who teaches mathematics, gave a presentation of ways she makes mathematical concepts visual for her students. She has them visualize many different analogies, personifies concepts, and places them in environments in which they interact, often humorously.

B. To create visual images externally
1. In ***non-art related*** endeavors

An exercise we used for creating visual images externally in non-art related endeavors was to create a visual dialogue. We worked on the principle that ***the underlying image governs the perception and drives the verbal dialogue or argument.***

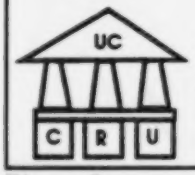
For this exercise we used a situation in the University of Cincinati that was controversial at the time. The University has three two-year branch campuses. The state legislature was considering separating them from the University and making them part of a state community college network. We asked the participants how they perceived the role of the branch campuses. Their perceptions, however, had to be stated in non-verbal terms as a sketch. Three examples are shown in Figure 5.

Perceptions of the Relationship of the University to Its Branch Campuses



This sketch showed that the branches were external and could be cut away with no harm to the University.

This sketch showed the branches as an integral part of the University.



This sketch showed the branches as the foundation of the University.

Figure 5.

A.2 To Visualize Internally: Stimuli THAT ARE Discipline-Related

Remember:
- **Analogies prompt visualizations**
- **Analogies are not a one-to-one correspondence**
- **Analogies both highlight and hide**

SUBJECT	CONCEPT	WHAT IT COULD BE LIKE (Analogy)
Art	Analogous colors	Neighbors living on either side of you
Statistics	Latent variable	A hidden hand waiting to emerge
Psychology	Psychotherapy	Having braces on your teeth
Business	Group growth and development over time (form, storm, norm, perform, adjourn)	Baking a cake

Figure 4.

Whether these arguments are valid, the visual image can be relied upon to **govern the perception and drive the verbal dialogue**. Once the image is elicited, often a surprise to its owner, it then can be examined. If desired, adjustments can be made in one's thinking.

Another way to use visual images in non-art related endeavors (or art related) is by an associative search strategy called clustering (Feinstein, 1989, 1980; Rico, 1983, 1976). Clustering enables one to spill and sort impressions, ideas, and feelings. It is a nonlinear form of brainstorming, synonymous with webbing. It precedes focused thinking, promotes lateral thinking, captures and generates thoughts, puts them in slow motion, makes them visual, and reveals patterns and relationships.

Clustering begins with a circled nucleus word and radiates outward. It requires unlined paper, a willingness to engage one's imagination and a willingness to defer judgment. Whatever is clustered can be weeded for redundancies and reclustered. It then can be reclustered yet again and used in a variety of ways. We gave an example using the color purple to show the connections and associations that can occur when clustering. See Figure 6.

Having given examples of clustering, we then assigned homework. Each participant was to cluster the courses he or she teaches, choose one and cluster several concepts essential to the course. They then were to choose one of the concepts and use that as a nucleus for a cluster that might prompt a visual analogy. The next day they were asked to teach their concepts to the other participants.

B. To create visual images externally
2. In ***art related*** endeavors

In the section on creating external images in art related endeavors we presented our version of the principles and elements of visual organization, shown in Figure 7. We illustrated them in 30 slides and provided definitions in the workbooks. Although the principles and elements of visual organization are known to artists, they often are unknown to those from other disciplines. Even a rudimentary knowledge of these principles and elements can be

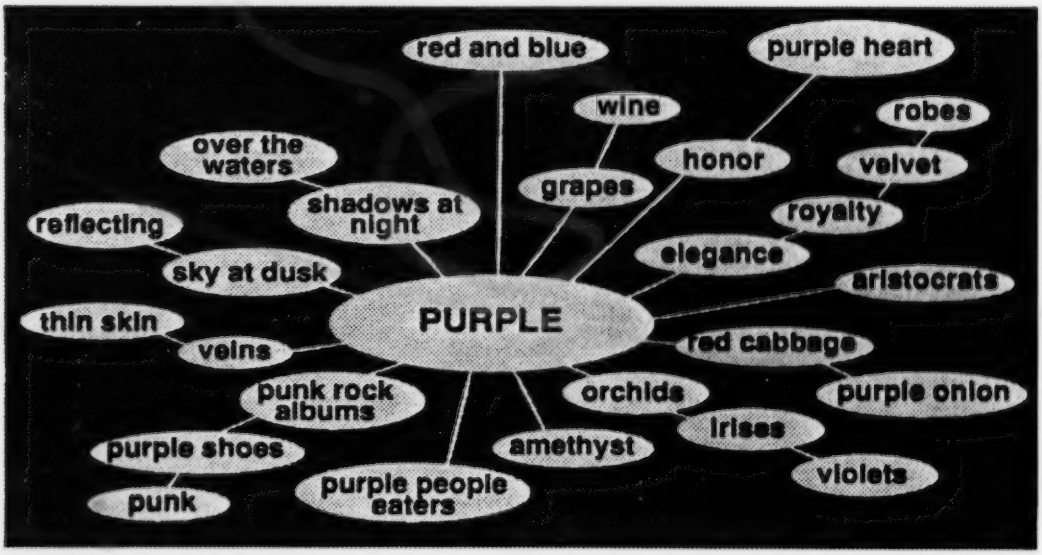


Figure 6.

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useful both in creating visuals (even when made entirely of text) and in reading visual images. While showing the slides that illustrate the principles and elements we stressed how they are derived from human physiological and psychological experiences. We also showed and discussed some examples of weak and strong visual organizations, also referred to as designs or compositions.

The Principles and Elements of Visual Organization

Principles

• Unity	• Balance
• Theme	• Movement
• Variety	• Orientation
• Proportion	• Placement

Elements

• Line	• Texture
• Shape	• Space
• Form	• Size
• Pattern	• Color

Figure 7.

An exercise we used for the creation of external images in art related endeavors was a torn paper drawing. We asked the participants to pretend that they couldn't talk or write but that they had an important emotion to convey. The only way to convey that emotion was to tear up black paper and glue it to an 18" x 24" piece of white paper. Another restriction was that they only could use non-objective images (nothing that looked realistic, i.e., crosses, people, flowers, etc.). They were given 45 minutes to create their drawings which were then displayed on a wall. Several were chosen to be "read" or interpreted by the participants. Most of the interpretations were confirmed by their creators.

C. To read visual images in the natural and built environment

The third part of our definition is to read visual images in the natural and built environment. Here we had the participants engage in two activities: one was to interpret some still images, i.e., art reproductions. The participants were divided into small groups and were to choose one image from a set of three. They were asked to describe to each other literally what they saw using as many art terms as appropriatefrom the principles and elements of visual organization. They were to avoid interpretation, analysis, and personal preference. The next step was to individually interpret what they saw metaphorically. The instructions were to cluster responses to the following:

a. What feelings does the image evoke? (Try to use the most basic ones, e.g., anger, fear, happiness, pain, loneliness, or their synonyms.)
b. What else, other than the obvious, can the image stand for?
c. Where, in the image, is the visual evidence that supports my interpretation?

They were told that the combination of a. and b. would be their metaphoric interpretation. in other words, they would have created a verbal metaphor from a visual one. To complete this activity, the small groups were asked to select the most apt interpretation and choose a spokesperson to share the interpretation with the larger group.

For the second activity in this section on reading images we had them interpret moving images, video and TV. Another of our committee members, an instructor in electronic media, used clips of TV shows and commercials. He explained how the principles and elements of visual organization also are used in moving images. He showed how composition, i.e., color/light-

ing, size, placement, movement/pacing emphasized particular visual messages—explicit, implicit, and subliminal. After this last presentation, we summarized the workshop, collected the evaluations, and adjourned.

In conclusion, although visual communication is pervasive in our culture, it is not recognized as a leading modality of human communication. Nor is it taught systematically by our educational institutions. Indeed, by the time our students reach adolescence, they have been exposed to thousands of hours of visual stimuli without the necessary skills to decipher and use the evocative power of images to understand the world around them. As a result they, and most of us, are left to react to predetermined and predigested visual stimuli. This state of affairs needs to be changed. We, at the University of Cincinnati through our faculty development workshops, have made a modest beginning toward changing that state of affairs. To be an educated person requires being visually literate. Being visually literate depends on three acquired abilities: the ability **to visualize** internally, **to create** visual images externally, and **to read** visual images in the natural and built environment. **VCR** is a fitting acronym and one whose time has come!

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